

Near-Term Tactical IP Enhancements

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Air Force MOIE

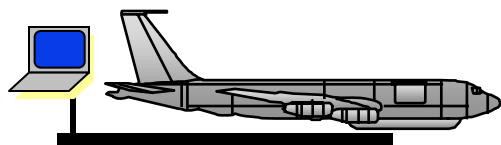


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Problem

- Air Force transitioning to IP network
- New tactical IP radio links emerging
- What is missing that limits effectiveness of near-term use of IP radio links?
 - Carry mix of C2 and routine SA traffic
 - Wide variety of link types in use
 - Some legacy links not IP capable

Background



Internal LAN



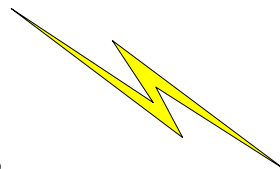
Number of
comm links
increasing,
some IP



Need methods to
manage IP flows
across larger
network



Available comm links
changing from legacy
to **IP capable**



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Objective

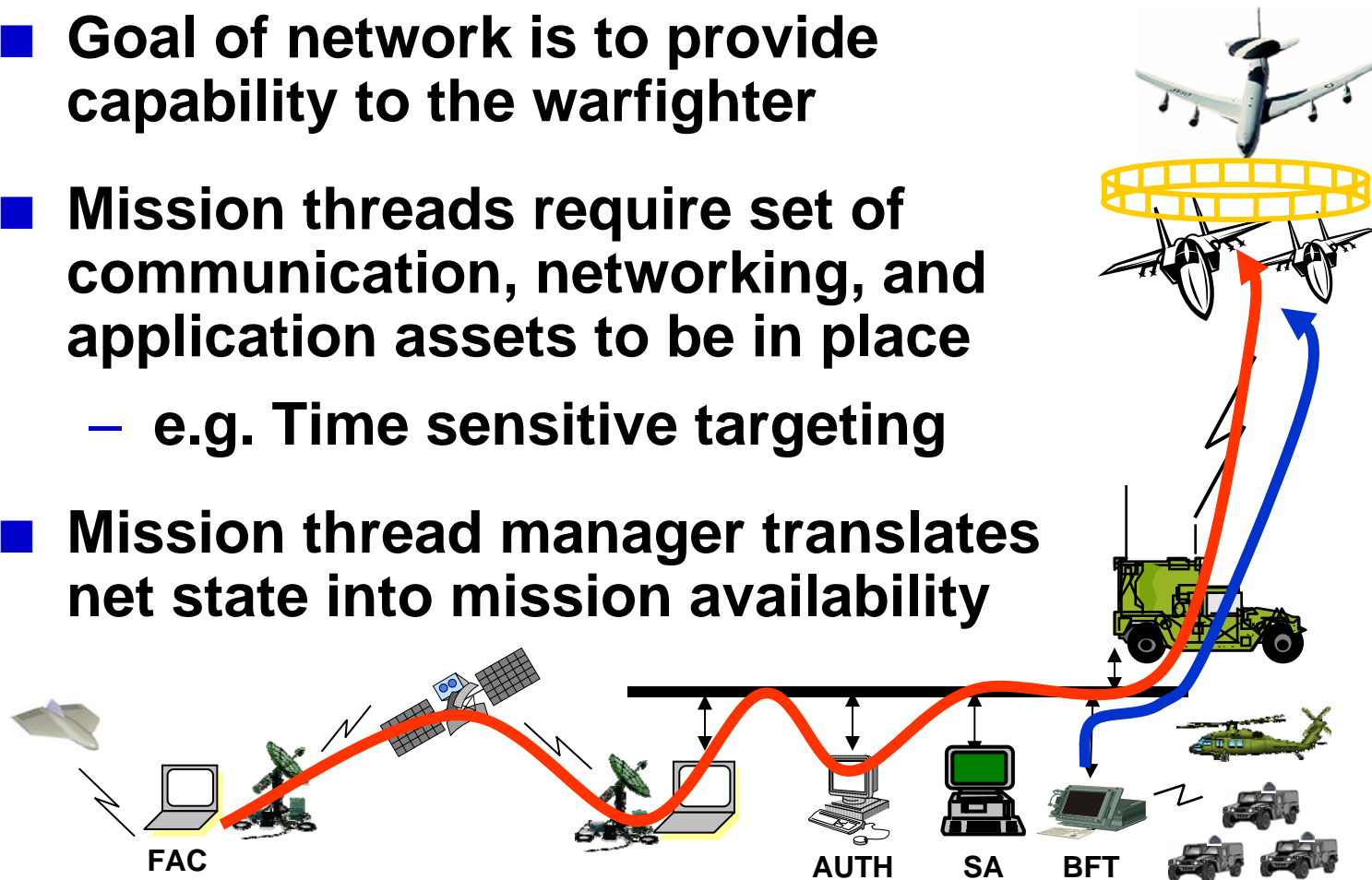
- **Develop tools and techniques to improve near-term effectiveness of emerging tactical IP links**
- **Provide facilities to enable new links to act as useful extensions of the developing infrastructure**
- **Allow net-centric methods and tactics to advance to the tactical edge**

Activities

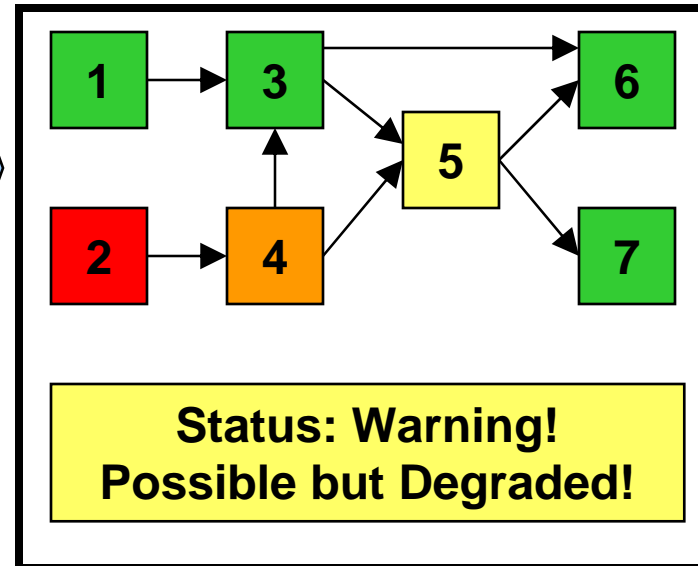
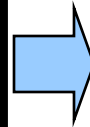
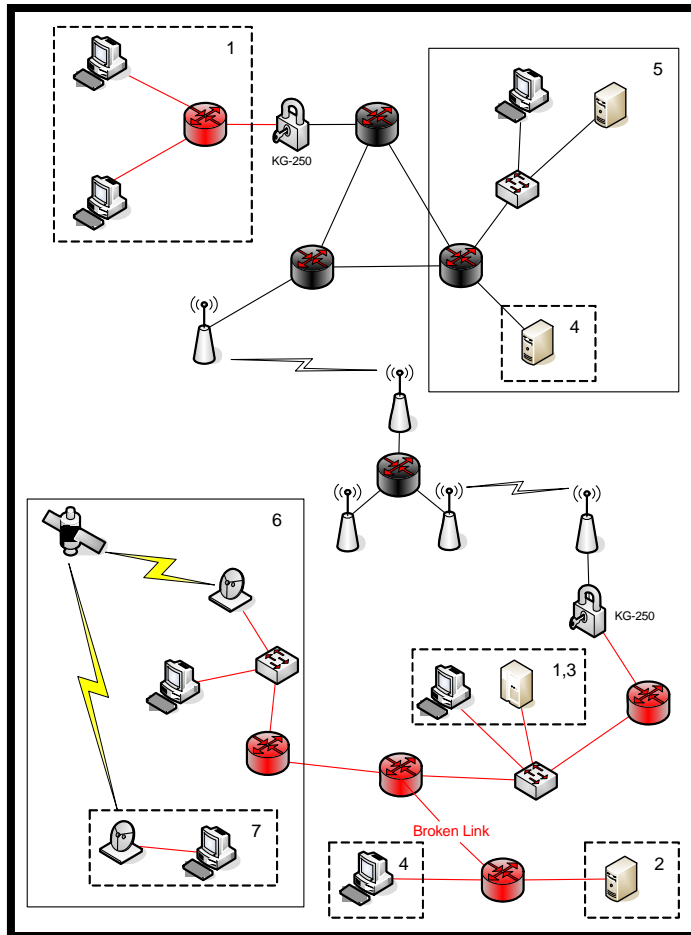
- Enable centralized control of rule-based QoS tagging agent
- Aggregate network state information
 - Across security boundaries
 - Across multiple link types
- Develop flexible “Mission Thread Manager”

Highlight

- Goal of network is to provide capability to the warfighter
- Mission threads require set of communication, networking, and application assets to be in place
 - e.g. Time sensitive targeting
- Mission thread manager translates net state into mission availability



Demonstration

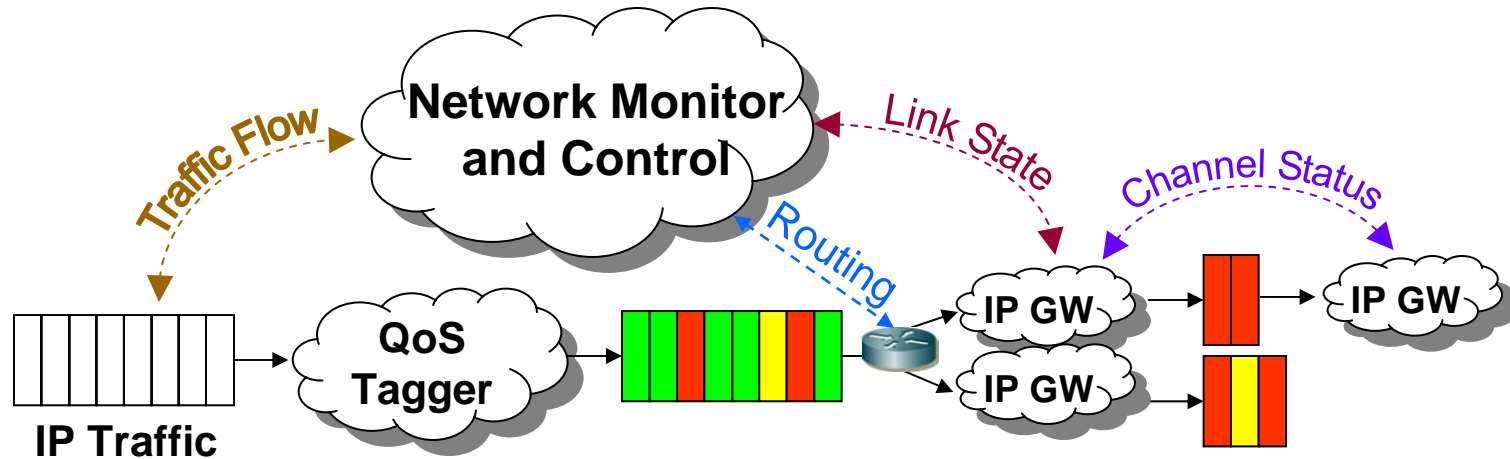


Mission Thread Manager provides simple indication of mission thread availability, with links back to underlying data to enable fault analysis

Impacts

- **Improve usability of emerging tactical IP networks**
 - **Provide basic connectivity *now!***
- **Provide early experience with tactical IP to help shape future development directions**
- **Develop better understanding of impact of widespread IP connectivity**
 - **Allows early formation of techniques and procedures for future all-IP environment**

Future Plans



- Integrate pieces into network control
 - Use channel state, queue depths, flow patterns, desired QoS to control routes
- Ensure that network is always operating as effectively as possible
 - Identify, reroute, and repair faults